

IN THE CLAIMS:

Claim 14 has been amended as follows:

14 (Currently amended) A cardiac pacemaker comprising:

5 a pulse generator which emits stimulation pulses respectively separated by stimulation intervals, each having a stimulation interval duration and collectively having an average duration;

a lead connected to said pulse generator and adapted to deliver said stimulation pulses to a heart and to receive a signal containing action potential information from the heart;

10 a modulation device connected to said pulse generator which alternately shortens and lengthens said stimulation interval duration without changing said average duration, thereby causing said pulse generator to emit modulated stimulation pulses;

15 a detector connected to said lead to detect said signal after each modulated stimulation pulse, thereby producing a detector output;

20 an evaluation unit connected to said detector for analyzing said detector output to determine an electric restitution of said heart at the average duration by measuring a duration of said action potential from said action potential information, said action potential duration having a measuring variable associated therewith, and for identifying a relationship between changes in said measuring variable, caused by modulation of said stimulation interval, and said average duration, and for
25 comparing said relationship to at least one predetermined value to obtain a comparison result; and

said modulation device for controlling said average duration dependent on said comparison result.

30 15. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said modulation device operates at periodic intervals to cause said pulse generator to emit said modulated stimulation pulses.

16. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said modulation device operates continuously to cause said pulse generator to emit said modulation stimulation pulses.

17. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said measuring variable is selected from the group consisting of an actual duration of the action potential of the myocardium of the heart, a time interval between a modulated stimulation pulse and a following T wave, and a time interval between a QRS and a T wave each following a modulated stimulation pulse.

18. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said evaluation unit forms an average of said measuring variable over a plurality of stimulation intervals.

19. (Previously added) A cardiac pacemaker as claimed in claim 14 comprising storing said changes of said measuring variable over a plurality of change cycles.

20. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said evaluation unit, for identifying said change in said measuring variable, employs a dimensionless variable of said electric restitution.

21. (Previously added) A cardiac pacemaker as claimed in claim 20 wherein said evaluation unit employs a gradient of said electric restitution as said dimensionless variable, calculated by forming a quotient between a change of said measuring variable and a change of said stimulation interval caused by said modulation device.

22. (Previously added) A cardiac pacemaker as claimed in claim 21 wherein said predetermined value is selected dependent on said gradient during a resting state of a body in which said heart is disposed.

23. (Previously added) A cardiac pacemaker as claimed in claim 20 wherein said evaluation unit, as said dimensionless variable, calculates a relative change in said electric restitution by forming a quotient between a change in said measuring variable and a previous value of said measuring variable.

24. (Previously added) A cardiac pacemaker as claimed in claim 23 wherein said predetermined value is selected dependent on said relative change during a resting state of a body in which said heart is disposed.

25. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said evaluation unit calculates an average value of said measuring variable over a plurality of stimulation intervals and wherein said average duration of said stimulation interval is fixed by external programming to a value obtained during a resting state of a body in which said heart is disposed, and wherein said fixed interval is stored as said predetermined value.

[Claim 26 has been amended as follows:]

26. (Currently amended) A cardiac pacemaker as claimed in claim 25 further comprising a sensor which identifies said state of rest, and wherein said ~~control~~ evaluation unit causes said stored value of said stimulation interval to be used by said pulse generator during said state of rest.

27. (Previously added) A cardiac pacemaker as claimed in claim 14 wherein said evaluation unit alters said predetermined value in dependence on a duration of said stimulation interval.

[Claim 28 has been amended as follows:]

28. (Currently amended) A cardiac pacemaker as claimed in claim 14 wherein said evaluation unit ~~unit~~ device operates said modulation unit to control said average duration by increasing said average duration if a difference between a gradient of said electric restitution and said predetermined value falls below a negative threshold value, and decreases said average duration if said difference exceeds a positive threshold value.